RESOURCES, FACILITIES AND SERVICES IN PRE-UNIVERSITY COLLEGE LIBRARIES: A STUDY IN DAKSHINA KANNADA AND UDUPI DISTRICTS

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1. Introduction

The Indian education system is renowned for its diversity and complexity, encompassing multiple stages such as Pre-primary, Primary, Secondary, Higher Secondary, and Higher Education. It follows the "10+2+3" pattern, where students complete 10 years of primary and secondary education, 2 years of higher secondary education, and 3 years of undergraduate study leading to a bachelor's degree. Secondary education, typically spanning four years (Standards IX to XII), caters to students aged 14 to 18, though in some states it begins from Class VIII. Higher secondary education (Classes XI and XII) is offered either in schools or in colleges, depending on regional educational structures. This framework, recommended by the Kothari Commission of 1964–66, lays the groundwork for students to pursue specialized professional fields such as skilled trades, technical studies, and medical professions (Parimala, 2023).

Higher Secondary Schools (HSS) in India cater to students typically aged 16 to 18, offering education in grades 11 and 12. They prepare students for higher education and various career paths, focusing on academic resilience and personal development (Lalthanpuii & Lalhriatpuii, 2024). Pre-University (PU) education serves as a critical developmental phase, preparing students for higher education while fostering holistic personality development. This stage allows students to explore diverse professional courses and disciplines through arts, science, and commerce streams offered over a two-year period. Catering primarily to students aged 17 to 18 years; PU education empowers learners to align their academic choices with their personal interests and career aspirations. Managed by the Department of PU education under the Government of Karnataka, this phase includes Government, Aided, and Un-aided Pre-University Colleges (PUC). These institutions are equipped with essential resources, including library facilities, physical infrastructure, and expert personnel, which collectively support the academic and personal growth of both students and educators.

Libraries, often regarded as the heart of educational institutions, play a pivotal role in fostering intellectual curiosity and academic excellence. A well-equipped library serves as a cornerstone of modern education, enabling the advancement of knowledge through reading, writing, and scholarly pursuits. Beyond supporting higher education, libraries are vital at the elementary, secondary, and undergraduate levels, where they enhance learning experiences

by providing timely, accurate, and organized information. By preserving and disseminating knowledge, libraries function as indispensable centres for academic growth. Since the advent of movable type printing in the fifteenth century, libraries have expanded their role in making information accessible efficiently and affordably, underpinning their reputation as non-profit service organizations dedicated to intellectual development.

The effectiveness of PU education is closely linked to the quality of teachers and their ability to motivate students. High-quality trainers can enhance students' self-efficacy and motivation to learn (Saputro & Syaebani, 2024). In educational settings, the library transcends its role as a mere repository of books to become an integral component of institutional success. It provides essential services for organizing, storing, and disseminating information, ensuring that users have access to the right resources at the right time. Libraries serve as reservoirs of knowledge and pillars of academic institutions, fostering a culture of lifelong learning. Education without library services is likened to a body without a soul, emphasizing the inseparable relationship between education and libraries. By supporting study activities, advancing knowledge, and offering timely and accurate information, libraries fulfil their mission of enabling academic achievement and personal growth. Their continued evolution underscores their commitment to education, as they adapt to meet the changing needs of learners and educators alike.

PU education, an important transition period between secondary and higher education, plays an important role in shaping academic and professional careers. PU colleges, particularly in Dakshina Kannada and Udupi districts of Karnataka, cater to arts, science and business students and promote intellectual development and skill acquisition. Libraries are an integral part of these institutions and support academic success by providing students and faculty access to vital resources and services. These libraries are crucial in promoting self-learning, facilitating research and creating an environment conducive to the dissemination of knowledge and skills development. The present study focuses on assessing the status of resources, facilities and services offered by PU college libraries in Dakshina Kannada and Udupi districts. Despite the established importance of libraries in academic institutions, significant differences in library infrastructure, resource adequacy and service quality remain between different institutions. These gaps hinder students' access to important academic materials and limit their ability to effectively achieve their educational goals. This research

examines the existing challenges and explores possible solutions to improve library efficiency and user satisfaction that contribute to the region's overall academic growth.

2. Review of literature

The literature review is a basic step and one of the most important activities in any research. It is a comprehensive summary of previous research on a topic and avoids the duplication of research work but also broadens the understanding of research problems. It plays an important role in assessing the studies carried out on a specific topic of interest and helps to identify the gaps in the knowledge to develop a base for a specific study. The literature relevant to the topic of the research has been collected from primary and secondary sources like Library, Information Science and Technology Abstracts (LISTA), Emerald Full Text Database, UGC-Infonet, and Google scholar etc. Some of the full texts of the required articles were obtained from the journals. Gorman and Clayton (2005) suggested that, in addition to assimilating the literature through abstracting and indexing journals, the footnotes of the retrieved papers should be scanned to find the related publications. Such citation analysis often points to earlier publications escaped in a search of current databases. Therefore, the references appended to the articles were also consulted for the study through LISTA. It also helps to identify the gaps in the literature and forms the basis for the present research. Therefore, a literature survey was carried out.

2.1 Library information resources in Pre-University colleges

Library resources in Pre-University (PU) colleges are essential for academic excellence and student self-directed learning. They include textbooks, reference books, journals, e-resources, and digital databases. Technology integration has expanded access to these resources. However, challenges like inadequate funding, limited ICT infrastructure, and a lack of professionally trained staff hinder their effective utilization. Addressing these issues through robust collection development strategies, ICT integration, and resource-sharing initiatives can significantly improve library services in PU colleges.

Aryee and Ogboo (2024) emphasized the challenges faced by PU level libraries, noting that the lack of critical resources, particularly textbooks, negatively affects academic

performance. David et al. (2024) highlighted how the transition from traditional to digital resources has significantly influenced students' information-seeking behaviors, requiring libraries to adapt to these evolving demands. Meena (2024) observed a 30% decline in physical book checkouts due to the shift toward digital resources, stressing the need to balance physical and digital collections while addressing challenges such as the digital divide through targeted digital literacy programs. Paikrao (2024) focused on PU college libraries in India, asserting that the digital transition has improved access to knowledge, facilitated information dissemination, and supported sustainable development initiatives. Prabowo et al. (2024) demonstrated the effectiveness of Problem-Based Learning (PBL) using library e-resources in enhancing students' Information Literacy Self-Efficacy (ILSE), showcasing the educational benefits of digital tools. Zhang et al. (2024) observed that digital transformation has significantly improved library service efficiency by streamlining resource allocation and expanding service offerings, validating the potential of digital technologies to modernize library operations.

Chalawadi and Kamble (2023) emphasized the ongoing importance of traditional print resources, such as textbooks and reference materials, for foundational learning, even as digital resources gain prominence. Durrany and Amsaveni (2023) cautioned that inadequate digital collections can lead to user dissatisfaction and reduced library engagement. Estrada et al. (2023) demonstrated a strong positive correlation between library resource usage and students' General Weighted Average (GWA), highlighting libraries' critical role in academic success. Jung and Choi (2023) explored the positive association between academic library expenditures and college graduation rates, particularly for low-income students, although the study does not specifically address PU colleges. Narayan et al. (2023) argued that transitioning to digital resources challenges traditional libraries to adopt new technologies and enhance users' information literacy.

Pagalilauan (2023) underscored the impact of resource availability and staff responsiveness on students' study habits and academic outcomes. Panigrahi and Sushanta (2023) emphasized the need to re-evaluate physical spaces and user engagement strategies as students increasingly shift away from print materials. Singh (2023) reported that PU college libraries in India are increasingly offering electronic resources, reference databases, and structured collection development to meet user needs. Tadituri and Naick (2023) identified a growing demand for specialized digital resources, particularly in engineering and technology.

Yadav (2023) noted that the reliance on online databases and internet resources has diminished the traditional role of PU college libraries.

Affum (2022) highlighted the challenges faced by PU college libraries, such as limited access to essential learning materials, technology, and librarian support, which adversely affect student performance. Das and Sarkar (2022) emphasized the role of digital resources in modernizing library functions, particularly during the COVID-19 pandemic, by enhancing access to information and supporting remote learning. Kumar (2022) underscored the crucial role of college libraries in promoting self-education and research through diverse resources. Parashar and Babel (2022) advocated for the growing importance of digital resources in expanding access to information and fostering self-directed learning. Paulson (2021) identified deficiencies in ICT facilities and information services in arts and science college libraries in India, noting their impact on resource availability and service quality.

Doiron (2021) discussed the integration of information technology into resource-based learning, highlighting how collaborations between libraries and educators can foster information literacy in authentic learning environments. Halder (2020) observed that digital transformation has redefined PU college libraries, turning them into dynamic information centers that enhance accessibility and user engagement. Chen (2020) proposed ontology-based resource fusion and linked data methods to address semantic heterogeneity, with SPARQL implementation significantly improving resource accessibility and user efficiency. Kumar and Naik (2020) reported the successful adoption of electronic resources like e-journals and databases in college libraries, while also noting diverse user preferences, with some students favoring print materials. Khatri (2019) emphasized the challenges institutions face in cataloging, metadata, and preservation, underscoring the need for robust management systems. Cao et al. (2019) advocated for libraries to integrate their resources into the educational process, aligning services with students' evolving academic needs.

2.2 Library facilities in Pre-University colleges

Library facilities in PU colleges are crucial in providing students with a conducive learning environment and access to diverse academic resources. These facilities typically include reading rooms, group study areas, computer access for digital resources, and basic amenities such as seating and lighting. Many libraries also offer cataloguing systems, lending

services, and access to e-resources such as digital books and online databases. However, the suitability of these facilities often varies as many institutions face limitations in space, infrastructure, and technological support. Improving library facilities through modernized infrastructure, integration of ICT tools and user-friendly services can significantly improve resource utilization and promote a more engaging academic experience for students.

Dixit et al. (2024) emphasized the pivotal role of academic libraries in offering essential resources such as scholarly databases, e-books, and print collections, significantly supporting student research and learning. Horban (2024) highlighted the transformative potential of innovative technologies, including artificial intelligence and electronic resource management systems, in streamlining access to information and enhancing the overall user experience. Nihlani et al. (2024) noted that many academic libraries in India face persistent challenges, such as limited funding and inadequate implementation of research support services, which restrict their ability to positively impact student performance. Samo and Agcito (2024) investigated the relationship between library support and student well-being, finding that participants reported high levels of well-being and positive self-assessment. Singh et al. (2024) underscored the value of research support services provided by academic libraries, such as research guides and consultancy, in helping students navigate complex information landscapes. Vinod and Kumar (2024) addressed the challenges faced by PU college libraries in maintaining effective digital services, focusing on issues like copyright compliance and the need for continuous professional development among librarians. Zheng et al. (2024) highlighted how designated quiet and collaborative study spaces in libraries encourage both individual and group learning, thereby enhancing student engagement.

Clark Hunt et al. (2023) emphasized the importance of implementing holistic universal design, enhancing virtual platforms, and providing staff training on diversity, equity, and inclusion to improve library accessibility and support for students with disabilities, ultimately enhancing their learning outcomes. Handrayani et al. (2023) demonstrated that overall learning facilities, including effective library resources, study spaces, and access to technology, significantly influence student learning outcomes in PU colleges. Singh (2023) identified access to electronic resources, strategic collection development, and tailored journal subscriptions as the most impactful library services in Indian PU college libraries, aligning with broader efforts to enhance offerings despite some challenges. Sain and Kaushik (2023) highlighted that while library services are essential, not

all are equally utilized, underscoring the need for libraries to adapt to user preferences effectively. Kaur and Kathuria (2022) observed that many libraries conduct orientation sessions to familiarize users with available resources, though awareness and utilization of these services vary across different user groups.

Shaw and Sarkar (2021) explored the implementation of cloud-based library management systems, which enable cost-effective resource sharing among smaller institutions, reducing hardware and IT support requirements. This approach fosters collaboration, minimizes duplication in resource subscriptions, and broadens service delivery. Venner and Washburn (2021) emphasized the benefits of utilizing student workers to provide peer guidance, enhancing service delivery and fostering a relatable support system. Arch and Gilman (2020) proposed strategies for academic libraries to support first-generation students through inclusive study spaces, tailored information literacy instruction, and strong campus partnerships, strategies that could be adapted to enhance PU college libraries in India for improved student outcomes. Sojanah and Ferlinda (2019) highlighted the broader impact of educational facilities, suggesting that enhancing various resources positively influences student learning outcomes. Gudi and Paradkar (2019), along with Satheesha and Vaddankere (2018), underscored the value of combining print materials, such as textbooks and reference books, with electronic resources, including e-journals and e-books, to meet diverse user preferences effectively.

This literature review showcases the evolution of library services in PU college libraries, with a strong emphasis on the transition to digital resources and the importance of adapting to emerging challenges and user needs.

2.3 Library services in Pre-University colleges

Pre-university colleges offer library services to support students' academic needs and promote effective learning. These services include book circulation, access to reference materials, digital resources, and librarian assistance. Some libraries also conduct orientation programs to familiarize students with available resources. The quality and range of services depend on the institution's resources and infrastructure. Innovative services like online catalogues, interlibrary loans, and workshops can enhance accessibility and empower students to achieve their academic goals more effectively.

Ghosh et al. (2024) emphasized the critical role of librarians in providing personalized guidance and training in information literacy, enabling students to develop essential skills such as critical thinking, data comprehension, and media literacy. Kahlon (2024) discussed the evolving role of librarians in the Internet-driven environment, highlighting how digital and virtual libraries have expanded access to information. Lu and Lin (2024) explored how college libraries promote digital reading initiatives and assessed the impact of digital reading on reader service satisfaction. Selicean and Ilea (2024) demonstrated a strong correlation between library usage and academic performance, with evidence showing that libraries contribute to higher grade point averages and improved student retention rates. Shesha and Singh (2024) examined how academic libraries in India support sustainable development goals while facing challenges such as funding constraints, digital resource limitations, and networking issues. Terrile (2024) highlighted the transformation of libraries into welcoming spaces that foster a sense of belonging and address students' basic needs and wellness. Velasquez (2024) emphasized the importance of user-friendly library designs featuring robust ICT infrastructure to significantly enhance student engagement and learning experiences.

Bhakar (2023) discussed the impact of ICT on Indian libraries through initiatives such as the National Digital Library (NDL) and the National Programme on Technology Enhanced Learning (NPTEL), which promote knowledge access, educational excellence, and research dissemination. Jayasinghe et al. (2023) focused on the physical facilities available to visually impaired and physically disabled undergraduates in universities, particularly their awareness and satisfaction levels with accessibility. Mustafa and Khan (2023) pointed out that many library websites fail to meet accessibility standards, lacking features for users with disabilities and essential services like inter library loans. Pagalilauan (2023) emphasized the importance of the physical library environment, including cleanliness, resource availability, and staff responsiveness, in shaping students' study habits and academic performance. Pathak (2023) noted that modern libraries, equipped with computers and internet access, play a key role in supporting digital literacy and enhancing research capabilities. However, Ramesh and Sharma (2023) pointed out that despite these advancements, some libraries face significant challenges, including a lack of trained personnel and insufficient funding, which hinder their ability to fully meet users' needs.

Kumar and Naik (2020) investigated user preferences for e-resources in college libraries, finding that a majority use the internet for career development and communication.

Narasappa and Kumar (2020) observed that 63.73% of respondents were male, with 84.31% from rural areas, and noted that 35.29% of respondents were satisfied with textbook availability, while 58.82% rated circulation services positively. Debnath and Sinha (2019) explored how college libraries are adapting to changing trends by organizing capacity-building programs and offering career development services. Mani et al. (2019) emphasized the importance of e-resources in education, noting that ICT knowledge and library infrastructure play significant roles in the effective usage of these resources. Chaudhari (2019) highlighted that college libraries in India provide access to digital technologies, open access resources, and databases such as Shodhganga, which enhance research capabilities, support knowledge exchange, and significantly impact student learning outcomes. In a study by Naveen and Kannappanavar (2019), it was reported that only 32.94% of libraries had achieved full automation, with many libraries still utilizing partial automation, indicating a need for further technological integration. These reviews demonstrate the evolution of library service priorities, from ensuring accessibility and infrastructure improvements to addressing physical and digital resource limitations.

The reviewed literature underscores the critical role of libraries in enhancing academic outcomes and supporting student learning through diverse resources, infrastructure, and services. Libraries are transitioning into multifunctional spaces that not only house traditional print collections but also emphasize digital resources, ICT integration, and innovative service models. Studies highlight that user satisfaction is deeply tied to the availability and quality of resources, including electronic journals, databases, and collaborative spaces. Additionally, the effective management of these resources through policies, trained staff, and ICT frameworks is essential in meeting the evolving academic needs of students and faculty. However, challenges such as inadequate funding, limited access to resources, insufficient training, and slow adoption of ICT persist, particularly in under-resourced institutions, impacting their ability to support academic excellence comprehensively.

Moreover, the literature points to a growing recognition of the importance of fostering information and digital literacy among students. Programs such as orientation sessions, information literacy training, and strategic resource development have been recommended to bridge gaps in resource awareness and utilization. Collaborative efforts between librarians, faculty, and policymakers are crucial in aligning library services with institutional goals.

While advancements in library automation and digital resource access have been noted, the unequal pace of adoption across institutions and gaps in accessibility for marginalized groups remain significant concerns. Overall, the findings emphasize the transformative potential of libraries when equipped with adequate resources, infrastructure, and professional expertise to create equitable and innovative learning environments.

3. Need for the study

The present study aims to assess the effectiveness of PU college libraries in meeting the information needs of their users. Specifically, it evaluates user awareness, resource utilization, and satisfaction with the services provided. To understand the current status and systems in place, a review of relevant literature was conducted, drawing from various publications in books, periodicals, databases, and theses/dissertations. Efforts were made to gather original articles and research studies on the topic.

Several educational committees and commissions have emphasized the importance of libraries in higher secondary schools or Pre-University educational institutions. The Mudaliar Commission (1952-53) highlighted that the library should be the central hub of intellectual and literary activity within the organized institutions. The report stressed the need for a well-equipped central library with a spacious reading room, qualified librarians, and the introduction of designated library periods. Similarly, the Kothari Commission of 1964-66 further reinforced the necessity of libraries in educational institutions, recommending that librarian salaries be aligned with those of teachers. The National Knowledge Commission (2005), under the leadership of Sam Pitroda, recognized libraries as "Gateways to Knowledge" and made strong recommendations regarding the promotion of Information and Communication Technology (ICT) applications in libraries. The National Education Policy (NEP) 2020 has also reiterated the significance of libraries in enhancing educational outcomes.

Despite these recommendations, there exists a research gap in understanding the information needs of PU college library users, particularly in the Dakshina Kannada and Udupi districts. Previous studies have not adequately addressed this demographic details, which presents an opportunity for this study to fill the gap. The goal is to identify the

strengths and weaknesses of PU college libraries in terms of resources, facilities, and services provided. Furthermore, it is crucial to assess the information needs of users to adopt policy development and suggest improvements that could enhance the effectiveness of these libraries. The findings could have broader applications, contributing to the overall improvement of library systems in PU education and similar educational programs. Thus, the current study seeks to investigate various aspects of the information requirements of PU college users, providing valuable insights into how libraries can better serve their educational communities.

4. Significance of the study

PU education is an important phase in every individual's academic journey, serving as a key milestone in both their educational and personal development. This stage not only lays the foundation for higher education but also plays a crucial role in shaping the overall personality. Further, it helps students make informed decisions about their future professional paths. The present study aims to improve library services by incorporating recommendations based on its findings, ultimately optimizing the use of library resources.

The study seeks to evaluate the strengths and weaknesses of PU college libraries in Karnataka, providing insights that will enable these libraries to enhance their resources, facilities, and services to better cater to the needs of their users. By identifying areas for improvement, the research will help libraries tailor their offerings to support student learning more effectively. Furthermore, the study will assist policymakers by offering valuable information about the actual requirements of library users, allowing them to implement informed strategies and initiatives.

In the long term, the findings of this study have the potential to improve the quality of library services in PU colleges. The enhancements derived from this research will contribute to the broader development of the PU education system, thereby benefiting students, educators, and the wider academic community. These improvements will foster a more conducive learning environment, supporting the academic growth of students and enhancing the overall educational experience.

5. Statement of the problem

The present study is intended to assess the use of existing library resources, facilities, and services provided by the PU Colleges in Dakshina Kannada and Udupi districts. Hence the theme of the study is conceived under the title **"Resources, Facilities and Services in Pre-University College Libraries: A Study in Dakshina Kannada and Udupi Districts".**

6. Definition and meaning of the key concepts

When conducting research, defining key concepts is crucial for clarity and precision. Thus a brief definition of key concepts is given below:

Library resources: According to the Oxford Dictionary, a library is "a building or room containing collections of books, periodicals, and sometimes films and recorded music for people to read, borrow, or refer to." It can also refer to a collection of books or periodicals held by an institution, individual, or accessible online. As defined by the Oxford Dictionary, resources are "a stock or supply of money, materials, staff, and other assets that can be drawn on by a person or organization in order to function effectively." In the present study, library resources refer to the various materials, both physical and digital, available in a library that aid in research, learning, and information dissemination. These resources typically include books, journals, databases, e-books, audio-visual materials, and other reference materials that support the educational and informational needs of the library users.

Library facilities: As defined by the Oxford Dictionary, facilities are "a place, amenity, or piece of equipment provided for a particular purpose." In the study, library facilities refer to the various amenities, equipment, and spaces provided within a library to support its functions and services. This includes reading rooms, computer access, study areas, multimedia resources, and other infrastructures designed to facilitate learning, research, and information access for library users.

Library services: As defined by the Oxford Dictionary, services are "a system or organization that provides something needed by the public," or "the particular skills or help that a person or organization offers." In the study, library services refer to the range of assistance and facilities provided by a library to support the informational, educational, and

research needs of its users. This includes borrowing and lending books, access to digital resources, reference assistance, research support, interlibrary loans, and various programs and workshops designed to enhance learning and literacy.

Pre-University college libraries: The libraries attached to PU college to cater to information needs of the user community is called PU college libraries. PU college libraries are to provide the resources and study environments to support the academic and research needs of students and faculty in these institutions. The library provides access to textbooks, reference materials, and other educational resources needed for further studies. It offers a quiet space for study, along with resources for assignments and exam preparation. Availability of resource include access to both physical and digital resources relevant to PU curriculums. These libraries play a vital role in bridging the gap between secondary and higher education by fostering academic skills and a habit of independent learning among students.

Dakshina Kannada (DK) district: Formerly known as South Kanara. DK district is located in the southern coastal region of Karnataka State of India. The district spans 4,861 square kilometres and is positioned at 12.8438 degrees North Latitude and 75.2479 degrees East Longitude. Bordered by the Arabian Sea to the west and the Western Ghats to the east, it shares boundaries with Udupi district to the north, Chikmagalur district to the northeast, Hassan district to the east, Kodagu to the southeast, and Kerala's Kasaragod district to the south. The district's coastline extends approximately 40-45kms, featuring rich marine resources and beautiful beaches. Historically part of the Madras Presidency, South Kanara was bifurcated in 1860, with North Kanara transfered to the Bombay Presidency in 1862. The name changed to Dakshina Kannada in January 1977. As per the 2011 census, Dakshina Kannada comprises of five taluks: Mangalore, Bantwal, Puttur, Belthangady, and Sulya, with additional administrative subdivisions into Moodabidri and Kadaba taluks. Mangaluru, the district headquarters, has evolved into an educational hub, hosting numerous reputed institutions that attract students from across India and abroad (Karnataka Kaipidi, 2022).

Udupi district: Udupi district was established on August 25, 1997, after separating from Dakshina Kannada. Covering 3,582 square kilometers, Udupi comprises the divisions of Udupi, Kundapura, and Karkala from the former district. Geographically, Udupi is located at 13.5401 degrees north latitude and 74.8741 degrees east longitude, bordered by the Western Ghats to the east and the Arabian Sea to the west. The district includes seven taluks: Udupi,

Kundapura, Karkala, Hebri, Brahmavar, Kaup and Byndoor, with Udupi city serving as the administrative center (Karnataka Kaipidi, 2022).

7. Objectives of the study

The objectives of the study are to find out the information requirements of the faculty and students and the assessment of resources, facilities and services provided by PU college libraries in Dakshina Kannada and Udupi districts. The main objectives of the study are;

1. To know the available resources, facilities and services in the libraries of PU colleges in Dakshina Kannada and Udupi Districts.
2. To evaluate variations in the purpose, frequency of visits and duration of library use among the different demographic groups of respondents.
3. To understand the importance and satisfaction of library resources, facilities and services.
4. To identify the problems faced by the users of PU college libraries.
5. To suggest the measures for effective use of PU college libraries to meet the user needs.

8. Hypotheses

In order to fulfil the objectives of the present study, the following hypotheses are formulated;

1. There is a significant association between the demographic variables and library visits.
2. The importance and satisfaction of information resources, facilities and services varies significantly depending on demographic variables.
3. The adequacy and accessibility of library resources, facilities and services show significant difference among the demographic variables.
4. There is positive correlation between the importance and satisfaction of library resources, facilities and services.

9. Scope and limitations of the study

The study aimed to assess the use of resources, facilities, and services in Pre-University college libraries across Dakshina Kannada and Udupi districts, covering a total of 190 colleges. The geographical scope of the research was limited to these two districts, specifically focusing on PU colleges that have library facilities. According to the PUE 2021-22 annual report, a total of 307 PU colleges were identified in these districts. Out of which only 190 colleges have library facilities. Therefore, the investigator has distributed the questionnaire to these colleges to know the library resources, facilities and services. Further, it is observed that the population under study comprised 3,590 faculty members and 78,603 students from the 190 colleges with library facilities (GOK, 2022a).

10. Research methodology

Research methodology provides the structured framework that guides researchers in planning, executing, and analysing their studies. It encompasses the selection of appropriate methods, the collection of relevant data, and the application of rigorous analysis to ensure the validity and reliability of research findings. The choice of methodology is crucial in addressing specific research questions, and a variety of methods, such as case studies, historical analysis, and surveys, can be used depending on the nature of the research. In this study, the survey method, utilizing questionnaires, was chosen to collect essential data from relevant stakeholders.

The first questionnaire was designed for librarians or library in-charge of the colleges under study. It consisted of five sections covering key aspects of library operations, such as general information, library resources, organization, automation, networking, facilities, and services. The researcher personally visited each participating college to distribute the questionnaires and collect data. Personal interviews were conducted to clarify any ambiguities and ensure accurate responses. The questionnaire included three types of questions: multiple-choice, Yes/No, and open-ended. The researcher also employed personal observation during visits to supplement the data collection.

The second questionnaire was aimed at gathering information from students and faculty members. This questionnaire was structured into four sections, each containing a

series of questions designed to assess users' opinions and experiences regarding various library facilities and services. Like the first, the questionnaire included multiple-choice, Yes/No, and open-ended questions. A five-point Likert scale was used to capture users' opinions about library resources and services. This approach allowed for a comprehensive understanding of user satisfaction and the effectiveness of library offerings.

A pilot study was conducted before the final version of the questionnaire was distributed. The pilot study involved administering the questionnaire to a sample group of users in the respondent colleges to assess the clarity and comprehensiveness of the questions. Based on the feedback and suggestions received, the final version of the questionnaire was refined and finalized. This iterative process ensured that the final tool was effective in capturing relevant data and addressing the study's objectives.

10.1. Colleges under study and population

The present study aimed to investigate the utilization of resources, facilities, and services available in Pre-University College libraries in the Dakshina Kannada and Udupi districts. To determine the population of colleges included in the study, the annual report of the Department of Pre-University Education (PUE) for the year 2021-22 was consulted. According to the report, there are a total of 307 PU colleges in these two districts. Given that the focus of the study is on the use of library resources, facilities, and services, the investigator selected only those colleges that have established libraries. As a result, 190 colleges with functioning libraries were included in the study. The population of the study is presented in Table 1.1 to ensure a homogeneous category of colleges under investigation.

Table 1.1 Population of the study

Type of colleges	Faculty	Student	Total
Govt.	723	15951	16674
Aided	1037	22451	23488
Un-aided	1830	40201	42031
Total	3590	78603	82193

Source: GOK Annual Report 2021-22

10.2. Sampling method

There are a number of statistical formulae available for calculation of sample size for a given population, including those by Robert V. Krejcie and Daryle W. Morgan (1970), Yamane Taro (1967), and Priscilla Salant and Don A. Dillman (1994). In the present study, the sample size was determined using the formula provided by Yamane Taro (1967). According to Yamane's formula, for a 95% confidence level and a margin of error (p) of 0.5, the required sample size for the study as follows:

Yamane Taro Formulae

$$n = \frac{N}{1+N(e)2}$$

n= the sample size
N = Total population
e= the margin of error 0.05.

Faculty

$$n = \frac{3590}{1+ 3590\ (0.05)^2}$$

= 359

Students

$$n = \frac{78603}{1+ 78603(0.05)^2}$$

=398

Based on the formula, the required sample size for the survey is 359 faculty members out of a population of 3,590, and 398 students from a total of 78,603 in the Dakshina Kannada and Udupi districts. The stratified random sampling method was employed to ensure a representative selection from the different strata of the population.

Table 1.2 Distribution of responses

Category	Total	Questionnaires	Responses	Percentage

	Population	Distributed	Received	
Faculty	3590	900	860	95.55
Student	78603	1150	1096	95.30
Total	82193	2050	1956	95.41

The Table 1.2 presents the distribution and response rates of the questionnaires sent to faculty and students in PU colleges of Dakshina Kannada and Udupi districts. Out of 3,590 faculty members, 900 questionnaires were distributed, and 860 responses received, resulting in a high response rate of 95.55%. Similarly, for the 78,603 students, 1,150 questionnaires were distributed, with 1,096 responses received, giving a response rate of 95.30%. Overall, 2,050 questionnaires were distributed, with 1,956 responses received, leading to a strong overall response rate of 95.41%. These response rates indicate a high level of engagement, participation from both faculty and students, suggesting the survey was well received, and the results are likely to be representative and reliable for analysing the use of resources, facilities, and services in these colleges.

10.3 Survey instrument

The primary data was collected through survey method using a set of structured questionnaire. The questionnaire was developed by the researcher based on a review of relevant literature and in consultation with subject matter experts. The opinions and suggestions of the experts were incorporated and the questionnaire was finalized. The questionnaire was divided into four sections:

Section A: General information
Section B: Library information resources
Section C: Library facilities and services
Section D: Overall views and opinions

The responses to the questions were measured using a 5-point Likert scale, with different criteria applied for each section. This rating system allowed for a clear and systematic evaluation of library resources, facilities, services, and overall user satisfaction.

10.4 Data collection and analysis

Once the population for the study was determined, the researcher initiated the data collection process using a structured approach. The method of data collection was guided by the research objectives and the problem at hand. The survey method was selected as the primary tool for data collection. This process involved designing the survey instrument and determining the most appropriate mode of distribution to gather relevant data from the field. The collected responses were coded and entered into the Statistical Package for Social Sciences (SPSS) software for analysis. The data were then analyzed according to predefined categories, with consideration given to the study's objectives and hypotheses. The analysis of the data collected from library users was structured into four main sections. The first section involved a percentage analysis, providing a clear overview of the data. The second section utilized descriptive statistical techniques, including simple mean analysis and standard deviation, to summarize key aspects of the data. The third section focused on hypothesis testing, employing a variety of statistical methods such as the chi-square test, Fisher's exact test, independent sample t-test, one-way ANOVA, correlation analysis, and regression analysis. Finally, the findings were presented in the form of tables and graphs, with accompanying explanations to ensure clarity and understanding of the results. Descriptive statistics were used to provide a comprehensive overview of the data, ensuring the analysis was thorough and meaningful.

11. Major findings and recommendations

Findings on the Information Requirements and Assessment of Library Users

Respondent Demographics

i. Type of Respondents: Students constituted the majority of respondents (56.03%, N=1096), while faculty accounted for 43.97% (N=860).
ii. Gender Distribution: Female respondents formed the majority (63.14%, N=1235), while male respondents made up 36.86% (N=721).
iii. Area-wise Responses: Most respondents were from rural areas (73.06%, N=1429), with urban respondents accounting for 26.94% (N=527).

iv. Discipline-wise Responses: Commerce discipline had the highest representation (44.53%, N=871), followed by arts (28.37%, N=555) and science (27.10%, N=530).

v. College-wise Responses: Un-aided colleges had the largest proportion of respondents (44.79%, N=876), followed by government colleges (29.55%, N=578) and aided colleges (25.66%, N=502).

Library Usage Patterns

i. Frequency of Library Visits: A majority (52.10%, N=1019) visited the library daily, while 13.75% (N=269) visited once a week.

ii. Among daily visitors, science discipline had the highest proportion (56.60%, N=300), followed by arts (55.31%, N=307) and commerce (47.30%, N=412).

iii. Faculty daily visitors were 47.21% (N=406), with science leading (57.01%, N=126), followed by arts (51.94%, N=174) and commerce (34.87%, N=106).

iv. Among students, 55.93% (N=613) visited daily, with arts (60.45%, N=133) showing the highest frequency, followed by science (56.31%, N=174) and commerce (53.97%, N=306).

v. Time Spent in the Library: Most respondents (60.33%, N=1180) spent less than an hour per visit, while only 1.12% (N=22) spent 3–4 hours.

vi. Discipline-wise, commerce respondents (67.85%, N=591) were the highest proportion spending less than an hour, followed by arts (56.94%, N=316) and science (51.51%, N=273).

vii. Purpose of Library Visits: The primary purpose of visits was to refer or borrow books (85.99%, N=1682), followed by reading newspapers (76.18%, N=1490) and collecting subject-specific information (64.77%, N=1267).

viii. Preference for Channels and Modes of Literature Search: College libraries were the primary information channel for most respondents (79.75%, N=1560), while the internet was the second choice (63.65%, N=1245).

ix. Assistance from library staff was the preferred mode for literature search (80.67%, N=1560), followed by staff guidance (63.80%, N=1248).

Importance and Satisfaction with Library Resources, Facilities, and Services

Library Resources

i. Importance: Subject books (mean = 4.77) and reference books (mean = 4.65) were rated the most important, while annual reports (mean = 3.53) were the least valued.
ii. Satisfaction: Subject books received the highest satisfaction score (mean = 3.64), while journals had the lowest (mean = 1.66), indicating a need for improvement.

Library Facilities

iii. Importance: Reading rooms were rated the most important facility (mean = 4.66), while group discussion facilities were considered the least important (mean = 2.35).
iv. Satisfaction: Lighting and ventilation received the highest satisfaction rating (mean = 3.60), whereas inter library loan facilities scored the lowest (mean = 1.00).

Library Services

v. Importance: Reference services (mean = 4.74) and the book bank facility (mean = 4.55) were considered highly important. The library catalogue/OPAC was rated the least important (mean = 3.95).

vi. Satisfaction: Reference services received the highest satisfaction (mean = 3.37), while internet facilities scored the lowest (mean = 1.24).

Overall Views and Opinions

i. Opinion on Libraries Meeting Information Needs
    - Most respondents expressed moderate satisfaction:
    - 34.61% (N=677) felt libraries met their needs "well."
    - 29.25% (N=572) said "fairly well," and 28.83% (N=564) said "moderately well."
    - Only 7.31% (N=143) rated their experience as "very well."

ii. Opinion on E-Resources versus Print Resources
    - Mixed opinions were observed:

- 32.36% (N=633) disagreed with the preference for e-resources over print, while 31.60% (N=618) agreed "to some extent."

iii. Adequacy and Accessibility of Resources
- Journals and reports were rated adequately accessible (mean = 3.14), but library timings were a significant concern (mean = 1.87).

iv. Opinions About Library Staff
- A majority (88.50%, N=1731) expressed dissatisfaction with library staff, with science users reporting the highest issues (93.21%, N=494).

v. User Awareness and Training Programs
- Most respondents (95.14%, N=1861) emphasized the need for training programs, particularly in resource awareness (62.01%, N=1213) and online search skills (54.65%, N=1069).

These findings highlight disparities in satisfaction levels and emphasize the need for targeted improvements in library resources, facilities, and user-focused services.

12. Testing of hypothesis

Statistical method was used to evaluate the hypothesis about a population based on sample of data. It includes various tests such as chi-square test, t-test, one-way ANOVA, regression analysis and so on.

Hypothesis 1: There is a significant association between the demographic variables and library visits.

A) Frequency of library visit is associated with gender, region, type of users, type of colleges and discipline.

As per the results of chi-square test shows that there is a significant association of gender *(x^2 (3) = 12.911, p= 0.005**)*, type of users *(x^2 (3) = 115.386, p= 0.000**)*, type of colleges *(x^2 (6) = 137.869, p= 0.000**)*, and discipline *(x^2 (6) = 25.285, p= 0.000**)*, with

respect to library usage as p value is less than 0.01. Whereas, in case of region *(x^2 (3) = 6.414, p= 0.093)*, the frequency of visiting library is not associated, as the p value is more than 0.05. Considering the overall, which proves that it is highly significant thus the frequency of library visit is associated with gender, region, type of users, type of colleges and discipline. Hence the statement is accepted (Table 4.45).

B) The time spent in library is associated with gender, region, type of users, type of colleges and discipline.

Based on the results of chi-square test, there is significant association with type of users *(x^2 (3) = 24.895, p= 0.000**)*, type of colleges *(x^2 (6) = 28.256, p= 0.000**)*, and discipline *(x^2 (6) = 57.104, p= 0.000**)*, with respect to library usage as p value is less than 0.01. Whereas, the gender *(x^2 (3) = 4.036, p= 0.258)*, and region-wise *(x^2 (3) = 8.416, p= 0.124)*, frequency of library visit, there is no significant association, as the p value is more than 0.05. Considering the overall, the frequency of visiting library by the users depends on type of users, type of colleges and discipline which proves that it is highly significant thus the statement is accepted (Table 4.46).

C) The purpose of visit to library has difference between gender, region, type of users, type of colleges and discipline.

Based on the results of chi-square test and fishers exact test value, the purpose for library visit shows the significant association between gender, region, type of users, type of colleges and discipline, as p value is less than 0.05. Hence, the statement is accepted (Table 4.47).

Therefore, there is a significant association between the demographic variables and the library visits the hypothesis 1 is accepted.

Hypotheses 2: The importance and satisfaction of information resources, facilities and services varies significantly depending on demographic variables.

A) The importance of information resources has significant difference between genders.

Based on the results of independent sample t-test, there is a significant mean difference between male and female library users with respect to subject books *(t = -3.992, p= 0.000**),* journals *(t = 3.031, p= 0.002**),* and articles in newspapers/popular magazines *(t = 2.827, p= 0.005**),* as the p value is less than 0.01. Whereas, reference books *(t = -.096, p= 0.923)* and annual reports *(t = .084, p= 0.933),* there is no significant mean difference, as the p value is more than 0.05. Considering the overall result, there is no significant mean difference between male and female library users. Hence, the overall importance of information resources overall result *(t = 1.097, p= 0.273),* has significant mean difference between genders. Therefore, the statement is rejected (Table 4.48).

B) The satisfaction of information resources has significant difference between genders.

As per the results of independent sample t-test, there is a significant mean difference between male and female library users with respect to the journals *(t = 3.444, p= 0.001**),* and annual reports *(t = 4.781, p= 0.000**),* as the p-value is less than 0.01. Considering the overall result *(t = 2.055, p= 0.040),* the satisfaction of information resources has significant mean difference between genders as p value is less than 0.05. Hence the satisfaction of information resources has significant difference between genders the statement is accepted (Table 4.49).

C) The importance of information resources has significant difference between regions.

The results of independent sample t-test show that there is a significant mean difference between rural and urban respondents with respect to journals *(t = -2.185, p= 0.029*),* annual reports *(t = -2.861, p= 0.004**)* and articles in newspapers/popular magazines *(t = -3.926, p= 0.000**),* as the p value is less than 0.05. Considering the overall result, the importance of information resources *(t = -2.987, p= 0.003**)* is significantly different between regions. So, the statement importance of information resources has significant difference between regions is accepted (Table 4.50).

D) The satisfaction of information resources has significant difference between regions.

The results of independent sample t-test show that there is significant mean difference between rural and urban respondents with respect to subject books *(t = -5.795, p= 0.000**),* reference books *(t = -8.377, p= 0.000**),* journals *(t = -2.624, p= 0.009**),* annual reports *(t = -4.443, p= 0.000**),* articles in newspapers/popular magazines*(t = -4.471, p= 0.000**),* as the p value is less than 0.01. The overall result *(t = -6.286, p= 0.000**),* all variables show the mean difference between rural and urban respondents. Hence, the statement the satisfaction of information resources is significantly different between regions as the p value is less than 0.05. So it is accepted (Table 4.51).

E) The importance of information resources has significant difference between types of user.

The results of independent sample t-test show that there is no significant mean difference between faculty and students with respect to all the information resources, as p value is more than 0.05. Considering the overall result *(t = -.806, p= 0.421),* all the variables do not show the mean difference between faculty and students. Hence, the importance of information resources is not significantly different among the users. So, the statement is rejected (Table 4.52).

F) The satisfaction of information resources has significant difference between types of user.

The results of independent sample t-test show that there is no significant mean difference between faculty and students with respect to the subject books *(t = -1.8746, p= 0.061),* reference books (*t = -1.288, p= 0.198),* journals (*t = -1.741, p= 0.082),* and annual reports (*t = -.605, p= 0.545)* there is no significant mean difference, as the p value is more than 0.05. Considering the overall result (*t = -1.887, p= 0.059),* most of the variables do not show the mean difference between faculty and students. Therefore, the satisfaction of information resources does not have significant mean difference between types of user. Hence, the statement is rejected (Table 4.53).

G) The importance of information resources has significant difference among types of college.

The results of one-way ANOVA, there is significant mean difference among Government, Aided and Un-aided colleges with respect to subject books, reference books, journals, annual reports and articles in newspapers/popular magazines as the p value is less than 0.05. In the overall result *(F = 11.117, p = 0.000)*, all the variables show the mean difference among Government, Aided and Un-aided colleges. Hence, the importance of information resources is significantly different among types of college. So, the statement importance of information resources has significant difference among types of college is accepted (Table 4.54).

H) The satisfaction of information resources has significant difference among types of college.

The results of one-way ANOVA, there is a significance mean difference among Government, Aided and Un-aided colleges with respect to subject books, reference books, journals annual reports, articles in newspapers/popular magazines, as the p value is less than 0.01. In the overall result *(F = 286.067, p = 0.000)*, all the variables show the mean difference among Government, Aided and Un-aided colleges. Hence, the satisfaction of information resources is significantly different among types of college. Therefore, the statement is accepted (Table 4.55).

I) The importance on information resources is significantly different among disciplines.

From the results of one-way ANOVA, it is evident that there is significant mean difference among faculty/students belonging to Arts, Science and Commerce discipline with respect to subject books, reference books, journals annual reports, and articles in newspapers/popular magazines, as the p value is less than 0.01. Considering the overall result *(F = 7.533, p = 0.001)*, all the variables show the mean difference among users from Arts, Science and Commerce discipline. Hence, the importance of information resources has significant mean difference among discipline. Therefore, the statement is accepted (Table 4.56).

J) The satisfaction on information resources is significantly different among discipline.

The results of one-way ANOVA, show that there is a significant mean difference among faculty/students from Arts, Science and Commerce discipline with respect to subject books, reference books, journals, annual reports, articles in newspapers/popular magazines, as the p value is less than 0.01. Considering the overall result *(F = 39.051, p = 0.000)*, all the variables show the mean difference among users from Arts, Science and Commerce discipline. The satisfaction on information resources has significant mean difference among discipline. Hence, the statement is accepted (Table 4.57).

K) The importance of library facilities has significant difference between genders.

As per the results of independent sample t-test, there is no significant mean difference between male and female with respect to new arrivals, adequate number of computers, adequate seating arrangement, reading room facility, facility for group discussion and lighting/ventilation as, the p value is more than 0.05. The overall result (*t = 2.301, p= 0.223)*, shows that most of the variables do not show the mean difference between male and female with respect to the importance of library facilities and so does not have significant difference between male and female as the p value is more than 0.05. Hence, the statement is rejected (Table 4.58).

L) The satisfaction of library facilities has significant difference between genders.

The results of independent sample t-test show that there is no significant mean difference between male and female with respect to arrangement of library resources (books, journals, etc.), new arrivals and facility for group discussion, as the p value is more than 0.05. Also considering the overall result (*t = 2.301, p= 0.080)*, it shows no significant mean difference between male and female with respect to the satisfaction of library facilities so does not have significant difference between male and female as the p value is more than 0.05. Therefore, the statement is rejected (Table 4.59).

M) The importance of library facilities has significant difference between regions.

As per the results of independent sample t-test, there is no significant mean difference between rural and urban respondents with respect to arrangement of library resources (books, journals, etc.), new arrivals, adequate number of computers, adequate seating arrangement, and facility for group discussion, as the p value is more than 0.05. The overall result (*t = -8.135, p= 0.273)*, most of the variables show no significant mean difference between the users of rural and urban areas with respect to the satisfaction of library facilities, as the p value is more than 0.05. Hence, the satisfaction of facilities does not have significant difference between users of rural and urban areas. Hence, the statement is rejected (Table 4.60).

N) The satisfaction of library facilities has significant difference between regions.

Based on the results of independent sample t-test, there is a significant mean difference between the users of rural and urban respondents with respect to arrangement of library resources (books, journals, etc.), inter library loan facility, new arrivals, adequate number of computers, adequate seating arrangement, reading room facility, facility for group discussion and lighting/ventilation, as the p value is less than 0.01. Considering the overall result (*t = -8.135, p= 0.000)*, all variables show significant difference between the users of rural and urban areas with respect to the satisfaction of library facilities. Hence, the satisfaction of facilities has significant difference between the users of rural and urban areas as the p value is less than 0.01. So, the statement is accepted (Table 4.61).

O) The importance of library facilities has significant difference between types of user.

As per the results of independent sample t-test show that there is a significant mean difference between faculty and students with respect to new arrivals, adequate number of computers, adequate seating arrangement and facility for group discussion, as the p value is less than 0.05. In the overall result (*t = -2.283, p= 0.023)*, most of the variables show the mean difference between faculty and students with respect to the importance of library facilities. Hence, the importance of library facilities has significant mean difference between faculty and students as the p value is less than 0.05. The statement is accepted (Table 4.62).

P) The satisfaction of library facilities has significant difference between types of user.

The results of independent sample t-test show that there is no significance mean difference between faculty and students with respect to adequate number of computers, adequate seating arrangement, reading room facility and facility for group discussion does not have significant mean difference between faculty and student, as the p value is more than 0.05. Therefore in the overall result *(t = -2.283, p= 0.191)*, most of the variables do not have significant mean difference between faculty and student with respect to the satisfaction of library facilities. Hence, the satisfaction of library facilities does not have significant difference between faculty and students as the p value is more than 0.05. Hence, the statement is rejected (Table 4.63).

Q) The importance of library facilities has significant difference among types of college.

From the results of one-way ANOVA, there is a significant difference among users from Government, Aided and Un-aided colleges with respect to arrangement of library resources (books, journals, etc.), Inter Library Loan facility, new arrivals, adequate number of computers, facility for group discussion and lighting/ventilation, as the p value is less than 0.05. As per the overall result *(F = 386.177, p = 0.000)*, most of the variables show significant mean difference between users from Government, Aided and Un-aided colleges with respect to the importance of library facilities. Hence, the importance of library facilities has significant mean difference among users from Government, Aided and Un-aided colleges as the p value is less than 0.05. Hence, the statement is accepted (Table 4.64).

R) The satisfaction of library facilities has significant difference among types of college.

As per the results of one-way ANOVA, there is a significant mean difference among types of colleges with respect to arrangement of library resources (books, journals, etc.), new arrivals, adequate number of computers, adequate seating arrangement, reading room facility, facility for group discussion and lighting/ventilation, as the p value is less than 0.05. In the overall result *(F = 386.177, p = 0.000),* all variables show the mean difference among users from Government, Aided and Un-aided colleges with respect to the satisfaction of library facilities. Hence, the satisfaction of library facilities has significant mean difference among

the users from Government, Aided and Un-aided colleges as the p value is less than 0.05. Thus, the statement is accepted (Table 4.65).

S) The importance of library facilities has significant difference among discipline.

Based on the results of one-way ANOVA, there is no significant mean difference among the users from Arts, Science and Commerce discipline with respect to Inter Library Loan, new arrivals, adequate number of computers, adequate seating arrangement, reading room facility and facility for group discussion, as the p value is more than 0.05. Considering the overall result *(F = 40.726, p = 0.258)*, most of the variables do not show the mean difference among the users from Arts, Science and Commerce discipline with respect to the importance on library facilities. Hence, the importance of library facilities does not have significant difference among the users from Arts, Science and Commerce discipline, as the p value is more than 0.05. Hence, the statement is rejected (Table 4.66).

T) The satisfaction of library facilities has significant difference among discipline.

As per the results of one-way ANOVA, there is significant mean difference among users from Arts, Science and Commerce discipline with respect to arrangement of library resources (books, journals, etc.), new arrivals, adequate number of computers, adequate seating arrangement, reading room facility, facility for group discussion and lighting/ventilation, as the p value is less than 0.05. Considering the overall result *(F = 40.726, p = 0.000)*, all variables show the mean difference between users from Arts, Science and Commerce discipline with respect to the satisfaction of library facilities. Hence, the satisfaction of library facilities has significant mean difference among library users from Arts, Science and Commerce discipline, as the p value is less than 0.05. Thus, the statement is accepted (Table 4.67).

U) The importance of library services has significant difference among genders.

Based on the results of independent sample t-test, there is no significant mean difference between male and female users with respect to Issue of books for reading outside

the library, newspaper clippings services, book bank facility, reference services, internet facility and library catalogue/OPAC, as the p value is more than 0.05. The overall result (*t = 2.656, p= 0.249),* most of the variables do not show the mean difference between users from male and female with respect to the importance of library services. Hence, the importance of library services does not have significant difference between male and female users, as the p value is more than 0.05. Therefore, the statement is rejected (Table 4.68).

V) The satisfaction of library services has significant difference among gender.

As per the results of independent sample t-test, there is a significant mean difference between male and female users with respect to issue of books for reading outside the library, book bank facility, photocopying services, reference services, internet facility and library catalogue/OPAC, as the p value is less than 0.05. Considering the overall result (*t = 3.824, p= 0.000),* the satisfaction of library services has significant mean difference between genders as the p value is less than 0.05. Thus, the statement is accepted (Table 4.69).

W) The importance of library services has significant difference among region.

Based on the results of independent sample t-test, there is no significant mean difference between male and female users with respect to issue of books for reading outside the library, newspaper clippings services, internet facility and library catalogue/OPAC, as the p value is more than 0.05. Considering the overall result (*t = .868, p= 0.386),* most of the variables show no mean difference between rural and urban users with respect to the importance of library services. Hence, the importance of library services does not have significant difference between rural and urban users, as the p value is more than 0.05. Therefore, the statement is rejected (Table 4.70).

X) The satisfaction of library services has significant difference among regions.

Based on the results of independent sample t-test, there is a significant mean difference between rural and urban library users with respect to user guidance/orientation, issue of books for reading outside the library, newspaper clippings services, book bank

facility, reference services, internet facility and library catalogue/OPAC, as the p value is less than 0.01. Considering the overall result (*t = -11.490, p= 0.000),* majority of the variables show the mean difference between rural and urban users. Hence, the satisfaction of library services is significantly different between regions, as the p value is less than 0.05. Thus, the statement is accepted (Table 4.71).

Y) The importance of library services has significant difference among type of users.

As per the results of independent sample t-test, there is no significant mean difference between faculty and student users with respect to user guidance/orientation, issue of books for reading outside the library, photocopying services and reference services, as the p value is more than 0.05. Considering the overall result (*t = 1.511, p= 0.131),* there is no significant mean difference between faculty and student users with respect to the importance of library services. Hence, the importance of library services does not have significant mean difference between faculty and student users. Therefore, the statement is rejected (Table 4.72).

Z) The satisfaction of library services has significant difference among type of users.

It was evident from the results of independent sample t-test, that there is significant mean difference between faculty and student users with respect to user guidance/orientation, newspaper clippings services, reference services and library catalogue/OPAC, as the p value is less than 0.05. Considering the overall result (*t = -2.542, p= 0.011),* most of the variables show mean difference between faculty and student users. Hence, the satisfaction of library services has significant mean difference between users, as the p value is less than 0.05. Thus, the statement is accepted (Table 4.73).

AA) The importance of library services is significantly different among types of college

Based on the results of one-way ANOVA, there is no significant difference among users from Government, Aided and Un-aided colleges with respect to user guidance/orientation, issue of books for reading outside the library, book bank facility and photocopy services, as the p value is more than 0.05. Considering the overall result *(F =*

1.882, p = 0.232), there is no significant mean difference between users from Government, Aided and Un-aided colleges with respect to the importance of library services. Hence, the importance of library services does not have significant mean difference among library users from Government, Aided and Un-aided colleges, as the p value is more than 0.05. Therefore, the statement is rejected (Table 4.74).

AB) The satisfaction of library services has significant difference among types of college

As per the results of one-way ANOVA, there is significant mean difference among users from Government, Aided and Un-aided colleges with respect to user guidance/orientation, issue of books for reading outside the library, newspaper clippings services, book bank facility, photocopy services, reference services, internet facility and library catalogue/OPAC, as the p value is less than 0.01. Considering the overall result *(F = 516.320, p = 0.000)*, all variables show the mean difference among users from Government, Aided and Un-aided colleges. Hence, the satisfaction of library services is significantly different among type of colleges, as the p value is less than 0.01. Thus, the statement is accepted (Table 4.75).

AC) The importance of library services has significant difference among discipline.

Based on the results of one-way ANOVA, there is no significant mean difference witnessed among users from Arts, Science and Commerce discipline with respect to user guidance/orientation, issue of books for reading outside the library, book bank facility, and internet facility, as the p value is more than 0.05. Considering the overall result *(F = 1.990, p = 0.137)*, most of the variables do not show the mean difference among users from Arts, Science and Commerce discipline with respect to the importance of library services. Hence, the importance of library services does not have significant difference among users from Arts, Science and Commerce discipline. Therefore, the statement is rejected (Table 4.76).

AD) The satisfaction of library services have significant difference among discipline.

As per the results of one-way ANOVA, there is a significant mean difference among users from Arts, Science and Commerce discipline with respect to user guidance/orientation, issue of books for reading outside the library, newspaper clippings services, book bank facility, photocopying services, reference services, internet facility and library catalogue/OPAC, as the p value is less than 0.01. Considering the overall result *(F = 63.612, p = 0.000)*, all the variables show the mean difference among users from Arts, Science and

Commerce discipline. Hence, the satisfaction of library services has significant mean difference among different discipline. Thus, the statement is accepted (Table 4.77).

The importance and satisfaction of library information resources, facilities and services with demographical variables are significant. Therefore, hypothesis 2 is proved.

Hypothesis 3: The adequacy and accessibility of resources, facilities and services have significant difference among the demographic variables.

(A) The adequacy and accessibility of resources, facilities and services have significantly different between genders.

Based on the results of independent sample t-test, there is no significant mean difference between male and female users with respect to all the indicators of accessibility of resources, facilities and services, as the p value is more than 0.05. Most of the resources, facilities and services do not show mean difference between male and female users. Hence, the adequacy and accessibility of resources, facilities and services do not have significant mean difference between male and female library users, as the p value is more than 0.05. Hence, the statement is rejected (Table 4.78).

(B) The adequacy and accessibility of resources, facilities and services have significant difference between regions.

As per the results of independent sample t-test, there is significant mean difference between rural and urban users with respect to printed books (*t = -8.163, p= 0.000),* electronic resources (*t = -5.986, p= 0.000),* equipment including computers (*t = -7.265, p= 0.000),* library timings (*t = -7.982, p= 0.000)* and assistance/co-operation of library staff (*t = -7.770, p= 0.000),* as the p value is less than 0.05. Most of the resources, facilities and services show the mean difference between users from rural and urban region. Hence, the adequacy and accessibility of resources, facilities and services have significant mean difference between rural and urban library users. Hence, the statement is accepted (Table 4.79).

(C) The adequacy and accessibility of resources, facilities and services will have significant difference between types of user.

Based on the results of independent sample t-test, there is significant mean difference between faculty and student users with respect to printed books (*t = -2.189, p= 0.029),* journals/reports (*t = -.055, p= 0.029),* equipment including computers (*t = -2.942, p= 0.003),* library timings and assistance/co-operation of library staff (*t = -2.492, p= 0.013),* as the p value is less than 0.05. Considering most of the library facilities it shows mean difference between faculty and students. Hence, the adequacy and accessibility of resources, facilities and services have significant mean difference between faculty and students except electronic resources. So, the statement is accepted (Table 4.80).

(D) The adequacy and accessibility of resources, facilities and services have significant difference among types of college.

Based on the results of one-way ANOVA, there is significant mean difference among users from Government, Aided and Un-aided colleges with respect to printed books *(F = 253.039, p = 0.000),* journals/reports *(F = 342.056, p = 0.000),* electronic resources *(F = 220.662, p = 0.000),* equipment including computers *(F = 538.143, p = 0.000),* library timings *(F = 299.531, p = 0.000)* and assistance/co-operation of library staff *(F = 527.581, p = 0.000),* as the p value is less than 0.05. Considering the variables it shows the mean difference among users from Government, Aided and Un-aided colleges. Hence, the adequacy and accessibility of library resources, facilities and services have significant mean difference among different types of college. Thus, the statement is accepted (Table 4.81).

(E) The adequacy and accessibility of resources, facilities and services have significant difference among disciplines.

Based on the results of one-way ANOVA, there is a significant mean difference among users from Arts, Science and Commerce discipline with respect to printed books *(F = 75.507, p = 0.000),* journals/reports *(F = 33.659, p = 0.000),* electronic resources *(F = 66.347, p = 0.000),* equipment including computers *(F = 67.046, p = 0.000),* library timings *(F = 50.196, p = 0.000)* and assistance/co-operation of library staff *(F = 81.474, p = 0.000),* as the p value is less than 0.05. Considering all the variables it shows the mean difference among users from Arts, Science and Commerce discipline. Hence, the adequacy and accessibility of library resources, facilities and services will have significant mean difference among different discipline. Thus, the statement is accepted (Table 4.82).

Hence, the adequacy and accessibility of library resources, facilities and services are significant with demographical variables. Therefore, hypothesis 3 is proved and accepted.

Hypothesis 4: There is positive correlation between the importance and satisfaction of resources, facilities and services.

(A) There is positive correlation between the importance and satisfaction of resources.

As per the Karl Pearson's correlation results between importance and satisfaction of library resources has been evidenced that there is significant positive correlation (r=.237, p<0.01**) between importance and satisfaction of library resources. It indicates that increase in the importance of library resources improves or increases the satisfaction of resources as both the variables move in the same direction. Hence, the statement is accepted (Table 4.83).

(B) There is positive correlation between importance and satisfaction of library facilities.

As per the Karl Pearson's correlation results between importance and satisfaction of library facilities. It has been evidenced that there is significant positive correlation (r=.187, p<0.01**) between importance and satisfaction of library facilities. It indicates that increase in the importance of library facilities improves or increases the satisfaction of library facilities as both the variables move in the same direction. Therefore, the statement is accepted (Table 4.84).

(C) There is positive correlation between importance and satisfaction of library services.

As per the Karl Pearson's correlation results between importance and satisfaction of library services. It has been evidenced that there is significant positive correlation (r=.337, p<0.01**) between importance and satisfaction of library services. It indicates that increase in the importance of library services improves or increases the satisfaction of library services as both the variables move in the same direction. Thus, the statement is accepted (Table 4.85).

Hence, there is positive correlation between the importance and satisfaction of resources, facilities and services. Therefore H4 is accepted.

13. Organisation of the Thesis

This study has been presented in five chapters. A brief account of each chapter is mentioned herein below;

Chapter I. Introduction: This chapter presents introduction, need for the study, statement of the problem, definition of the key concepts, objectives of the study, significance of the study, scope and limitations of the study, describes the research process including hypotheses and population of the study and information related to instruments used for data collection, response pattern, techniques used for data analysis and chapterisation.

Chapter II. Review of Literature: This chapter presents the review of the literature on issues related to the research problem and it is presented in the chronological order.

Chapter III. Profile of Pre-University College Libraries in Dakshina Kannada and Udupi Districts: This chapter presents a concise overview of the current status of the libraries in Pre-University Colleges located in the Dakshina Kannada and Udupi districts.

Chapter IV. Data Analysis: This chapter provides an analysis and interpretation of data collected. It is divided into four sections. The first section presents a percentage analysis, while the second section applies descriptive analysis techniques such as simple mean analysis, mode, and standard deviation. The third section focuses on testing hypotheses using statistical tools such as the chi-square test, Fisher's exact test, independent sample t-test, one-way ANOVA, correlation, and regression analysis. The collected data is presented in the form of tables and graphs with necessary explanations given wherever necessary.

Chapter V. Findings, Recommendations and Conclusion: A brief summary of findings based on the survey results and discussions of analysis are provided and suggestions are given.

Appendices and Bibliographical References are given at the end. The investigator has used American Psychological Association (APA) style for presenting the bibliographical references.

14. Summary

The study highlights the crucial role of PU college libraries in promoting academic achievement and personal development of students in Dakshina Kannada and Udupi districts. However, the results show that only 190 out of 307 PU colleges have functional libraries, indicating a significant gap in library infrastructure and accessibility. Additionally, available resources are often inadequate, outdated, or irrelevant to current academic needs. Key issues identified include inadequate funding, lack of trained library professionals, limited ICT integration and inadequate facilities such as reading rooms and internet connectivity. User dissatisfaction with resources and services, particularly in areas such as serial access, inter library loans and digital services, highlights the need for comprehensive library reforms. The study also identifies significant differences in library use by gender, region, college type and academic discipline, with rural and unsupported colleges facing the greatest challenges. Despite these limitations, respondents emphasized the importance of libraries in academic life and suggested improvements such as modern ICT tools, user awareness programs and better equipped facilities to meet changing educational needs. The study concludes by recommending strategic investments in library infrastructure, staff training and user-centred services to ensure that PU university libraries fulfil their potential as centres of academic excellence and enjoyment of life.

References

Affum, M. Q. (2022). Reinforcing the most relevant themes that elevate lecturers, students, patrons teaching and learning. *International Journal of Cloud Computing and Database Management*, *3*(2), 04–07. https://doi.org/10.33545/27075907.2022.v3.i2a.36

American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.). American Psychological Association.

Arch, X., & Gilman, I. (2020). *Academic library services for first-generation students*. Bloomsbury. https://doi.org/10.5040/9798400606380

Aryee, R., & Ogboo, E. (2024). Library resources constraints, frustration, and user behavior: An empirical library operations study. *Brain and Behavior*, *14*(7). https://doi.org/10.1002/brb3.3627

Bhakar, J. (2023). Exploring the impact of ICT tools in Indian libraries. *International Journal for Multidisciplinary Research*, *5*(1). https://doi.org/10.36948/ijfmr.2023.v05i01.5520

Cao, X.-Y., Liu, P.-H., Hu, X., & Deng, T.-B. (2019). Research on embedded information service model of university library under the environment of innovation and entrepreneurship. *Proceedings of the 4th Annual International Conference on Social Science and Contemporary Humanity Development (SSCHD 2018)*. https://doi.org/10.2991/sschd-18.2019.57

Chalawadi, J. M., & Kamble, V. T. (2023). Library resources, facilities and services in colleges of education affiliated to Bangalore City University. *Library Progress (International)*, *43*(2), 131–150. https://doi.org/10.48165/bpas.2023.43.2.2

Chaudhari, B. H. (2019). The role of library in higher education. *Scholarly Research Journal for Humanity Science & English Language*, *6*(26). https://doi.org/10.21922/srjhsel.v6i26.11849

Chen, X. (2020). Application research on integration service of library information resources using linked data. *2020 13th International Conference on Intelligent Computation Technology and Automation (ICICTA)*, 457–460. https://doi.org/10.1109/icicta51737.2020.00103

Clark Hunt, L., Steele, J., Creel, S., & Cromwell, J. (2023, September 29). Creating inclusive environments in academic libraries through universal design. *Proceedings of the ALISE Annual Conference*. https://doi.org/10.21900/j.alise.2023.1267

Das, D., & Sarkar, S. (2022). Digital technology used in college library services during covid-19 situation: Impact and implementation. *Towards Excellence*, *14*(2).

David, S., Pillai, D. M., & Vinod, D. (2024). A study on factors influencing information seeking practices among young adults. In *Futuristic Trends in Social Sciences* (pp. 35–46). IIP Series. https://doi.org/10.58532/v3bjso1p1ch2

Debnath, N., & Sinha, M. K. (2019). Role of college libraries in organizing capacity building programmes and career development services for library users: a case study of select colleges of west Tripura district. *Library Progress (International)*, *39*(1), 186–198.

Dixit, C., Kumar, C., Kumar, P., & Lata, K. (2024). Role of academic libraries and information services: a study. *International Journal of Modern Achievement in Science, Engineering and Technology*, *1*(2), 76–82. https://doi.org/10.63053/ijset.28

Doiron, R. H. (2021). University/school library collaborations to integrate information technology into resource-based Learning. *IASL Annual Conference Proceedings*, 145–154. https://doi.org/10.29173/iasl8142

Durrany, A., & Amsaveni, N. (2023). Reduction of usership in selected academic institutions NCR Delhi: A Descriptive Study. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, *12*(3), 3476–3483.

Estrada, C.Y.E., Gutierrez, F.V. O., Valdez, M.G., & Alenzuela, R.C. (2023). Enhancing academic success through utilization of library resources in a public university in the Philippines. Asia Pacific Journal of Social and Behavioral Sciences, 21, 71-83.

Ghosh, S., Sarkar, S. K., Roy, P., Roy, B., & Podder, A. (2024). Role of libraries in promoting digital literacy and information fluency. In K. Sacco, A. Norton, & K. Arms (Eds.), *Navigating AI in Academic Libraries: Implications for Academic Research* (pp. 77-108). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-3053-1.ch005

GOI. (2020). *National Education Policy 2020 Ministry of Human Resource Development Government of India*. Ministry of Human Resource Development. https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf . Retrieved June 10, 2023, from https://www.education.gov.in/.

GOK. (2022a). *Department of pre-university education annual report 2021-22*. Department of Pre-University Education. Retrieved November 10, 2023.

GOK. (2022b). *Karnataka school examination and assessment board*. Karnataka School Examination and Assessment Board; KSEAB. https://kseab.karnataka.gov.in/english. Retrieved June 19, 2023, from https://kseab.karnataka.gov.in/english.

Gorman, G. E., & Peter, C. (2005). Qualitative research for the information professional: A practical handbook. London: Facet Publishing.

Gudi, S. P., & Paradkar, P. M. (2019). Users' satisfaction with library resources: a survey of engineering college libraries, Pune, India. *Journal of Indian Library Association*, *54*(3), 135–142. https://www.ilaindia.net/jila/index.php/jila/article/view/180

Halder, D. (2020). A transitional shift from traditional library to digital library. In A. Kaushik, A. Kumar, & P. Biswas (Eds.), *Handbook of Research on Emerging Trends and Technologies in Library and Information Science* (pp. 147-155). IGI Global. https://doi.org/10.4018/978-1-5225-9825-1.ch011

Handrayani, D., Rahmadani, K., Baqi, F. A., & Kassymova, G. K. (2023). Education transformation in era 4.0: The effect of learning facilities on student learning outcomes. *Journal of Computer-Based Instructional Media*, *1*(1), 34–43. https://doi.org/10.58712/jcim.v1i1.106

Horban, Y. (2024). Innovative technologies and methods in the management of higher education establishment library. *Library Science Record Studies Informology*, *20*(1), 12–18. https://doi.org/10.63009/lsrsi/1.2024.12

Jayasinghe, N. M. A., Kanthilatha, N., & Karunarathna, M. M. S. A. (2023). Creating equal opportunities: evaluating physical facilities for undergraduate students with special needs. *Vidyodaya Journal of Humanities and Social Sciences*, *8*(2), 65–77. https://journals.sjp.ac.lk/index.php/vjhss/article/view/6459

Jung, Y. J., & Choi, J. (2023). The Impact of Academic Library Expenditure on College Graduation Rates. *Proceedings of the ALISE Annual Conference*. ALISE Annual Conference. https://doi.org/10.21900/j.alise.2023.1263

Kahlon, K. K. G. S. (2024). *Role of internet in management college libraries in Mumbai*. San International Scientific Publications. https://doi.org/10.59646/lib/229

Karnataka Kaipidi. (2022). *Karnataka Kaipidi (Kannada)*. Vasan.

Kaur, K., & Kathuria, K. (2022). Assessment of students and faculty satisfaction a case study of Punjab agricultural university library facilities. *DESIDOC Journal of Library & Information Technology*, *42*(4), 246–252. https://doi.org/10.14429/djlit.42.4.17844

Khatri, N. K. (2019). Selection and acquisition of electronic resources in academic libraries: Challenges. In R. Bhardwaj & P. Banks (Eds.), *Research Data Access and Management in Modern Libraries* (pp. 196-219). IGI Global Scientific Publishing. https://doi.org/10.4018/978-1-5225-8437-7.ch010

Kothari, D.S. (1966). *Report of the Education Commission 1964-66.* Ministry of Education, Government of India. http://www.academics-india.com/Kothari%20Commission%20Report.pdf Retrieved June 10, 2023, from https://www.education.gov.in/.

Krejcie, R.V, & Morgan, D.W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*. 30(3), 607-610.

Kumar K. S. & Naik, L. (2020). Usage of Electronic Resources, Internet, and Choices of Resources in College Libraries of India: A Study. In S. Thanuskodi (Ed.), *Handbook of Research on Digital Content Management and Development in Modern Libraries* (pp. 76-85). IGI Global Scientific Publishing. https://doi.org/10.4018/978-1-7998-2201-1.ch005

Kumar, T. (2022). A libraries survey of different colleges of education with respect to facilities, usages and modernization: A college would be incomplete without a good library. *IP Indian Journal of Library Science and Information Technology*, *6*(2), 82–87. https://doi.org/10.18231/j.ijlsit.2021.018

Lalthanpuii, S., & Lalhriatpuii. (2024). Detailed analysis of the academic resilience of higher secondary school students. *American Journal of Interdisciplinary Research and Innovation*, *3*(1), 33–38. https://doi.org/10.54536/ajiri.v3i1.2262

Lu, Y., & Lin, S. (2024). Digital transformation in college libraries: The effect of digital reading on reader service satisfaction. *PLoS ONE*, *19*(8), e0307699–e0307699. https://doi.org/10.1371/journal.pone.0307699

Mani, M., Hameed, S. S., & Thirumagal, A. (2019). Impact of ict knowledge, library infrastructure facilities on students usage of e-resources: An empirical study. *Library Philosophy and Practice*, *1*(2225).

Meena, A. K. (2024). Digital transformation in libraries: A quantitative analysis of technological adoption and user impact. *International Journal of Agriculture Extension and Social Development*, *7*(1), 661–663. https://doi.org/10.33545/26180723.2024.v7.i1i.275

Mudaliar, A. L. (1953). Report of the secondary education commission. In *Indian Culture* (p. 320). Government of India, Ministry of education. Retrieved June 25, 2023, from https://indianculture.gov.in/reports-proceedings/report-secondary-education-commission.

Mustafa, F., & Khan, J. (2023). Content analysis of select college library websites of Jawaharlal Nehru technological university, Hyderabad: A study. *International Journal*

of Research - Granthaalayah, 11(7). https://doi.org/10.29121/granthaalayah.v11.i7.2023.5261

Narasappa, K. C., & Kumar, D. (2020). User satisfaction of library resources and services: A survey of pre- university college teachers in Karnataka, India. *Library Philosophy and Practice (E-Journal), 1*(4747).

Narayan, R., Pradhan, B., & Mandal, S. (2023). Role of libraries in higher education in India with reference to central university of Odisha. *Science and Culture*, *89*(7-8). https://doi.org/10.36094/sc.v89.2023

Naveen, C. L., & Kannappanavar, B. U. (2019). Use of information communication technology college libraries: A study. *Library Philosophy and Practice, 2653*(1).

Nihlani, A., Chhabda, P. K., Ahmed, M., & Pandey, S. K. (2024). Funding and library resource management in higher education universities in India. *Indian Journal of Information Sources and Services*, *14*(2), 34–40. https://doi.org/10.51983/ijiss-2024.14.2.06

OUP. (2019). *Oxford Advanced Learner's Dictionary*. Oxfordlearnersdictionaries.com. https://www.oxfordlearnersdictionaries.com/definition/english/. Retrieved June 12, 2023, from https://www.oxfordlearnersdictionaries.com/definition/english/.

Pagalilauan, J. B., Buco, J. T., & Daquioag, E. R. (2023). Library environment affecting the study habits and academic performance of students of SJCB. *American Journal of Education and Technology*, *2*(3), 51–57. https://doi.org/10.54536/ajet.v2i3.1751

Paikrao, S. G. (2024). Digital resources and sustainable development: Role of libraries. *Ecology, Environment and Conservation*, *30*(2), 580–582. https://doi.org/10.53550/eec.2024.v30i02.026

Panigrahi, S., & Sushanta, P. K. (2023). Re-purposing the physical space of an academic library in the digital era: A case study of Jawaharlal Nehru University and Delhi University, New Delhi (India). *Evidence Based Library and Information Practice*, *18*(2), 17–43. https://doi.org/10.18438/eblip29976

Parashar, V., & Babel, P. (2022). A study on development and forms of electronic resources in libraries. *Mathematical Statistician and Engineering Applications*, *71*(3), 159–166. https://doi.org/10.17762/msea.v71i3.127

Parimala, D. (2023). Indian educational policy from Kothari Commission (1964-66) to New Education Policy 2020: In the light of higher education. *Journal of Emerging Technologies and Innovative Research. 10*(9), 336-380.

Pathak, N. K. (2023). NEP 2020 role of libraries in the Field of higher Education. *Technolearn an International Journal of Educational Technology*, *13*(1). https://doi.org/10.30954/2231-4105.01.2023.2

Paulson, C. (2021). Ict in arts and science college libraries. *Asian Journal of Multidimensional Research*, *10*(5), 185–191. https://doi.org/10.5958/2278-4853.2021.00387.6

Pitroda, S. (2007). Report of the National Knowledge Commission: Recommendations on School education. Retrieved June 27, 2023, from https://www.sampitroda.com/knowledge-commission.

Prabowo, T. T., Sitthiworachart, J., Hong, J. C., & Joy, M. (2024). Problem-based learning with library e-resources to enhance student information literacy self-efficacy. *Library Management*, *45*(8-9), 564–580. https://doi.org/10.1108/lm-07-2023-0061

Ramesh, K. S., & Sharma, R. N. (2023). Library system and service in colleges of Bhandara, Gondia Division. *Journal of Advances in Science and Technology*, *20*(2), 203–207. https://doi.org/10.29070/5skxra74

Sain, P., & Kaushik, P. (2023). Library services at MBA college libraries in Jaipur: a study with student's prospective. *International Journal of Research in Library Science*, *9*(4), 52–58. https://doi.org/10.26761/ijrls.9.4.2023.1484

Salant, P. & Dillman, D. A. (1994). *How to conduct your own survey*. New York: John Wiley.

Samo, P., & Agcito, M. R. (2024). Library support: Implications on student well-being. *British Journal of Multidisciplinary and Advanced Studies*, *5*(2), 1–17. https://doi.org/10.37745/bjmas.2022.0448

Saputro, K., & Syaebani, M. I. (2024). The influence of pre-training factors on training effectiveness mediated by motivation to learn, motivation to transfer, and self-efficacy – case study on non-ministerial government institutions. *Quantitative Economics and Management Studies*, *5*(3), 658–669. https://doi.org/10.35877/454ri.qems2646

Satheesha, H., & Vaddankere, M. (2018). International journal of library and information studies library resources and services in the selected engineering college libraries of Karnataka, India-a survey. *International Journal of Library and Information Studies*, *8*(2), 71–77.

Selicean, C. F., & Ilea, M. (2024). Current trends in research on the role of university libraries in students' academic success: A review. *Bulletin of University of*

Agricultural Sciences and Veterinary Medicine Cluj-Napoca Horticulture, *81*(1), 1–10. https://doi.org/10.15835/buasvmcn-hort:2023.0031

Shaw, J. N., & De Sarkar, T. (2021). A cloud-based approach to library management solution for college libraries. *Information Discovery and Delivery*, *49*(4), 308–318. https://doi.org/10.1108/idd-10-2019-0076

Shesha, A., & Singh, R. (2024). The role of Indian academic libraries in advancing and achieving sustainable development goals. *LIS TODAY*, *10*(1), 29–35. https://doi.org/10.48165/lt.2024.10.5

Singh, D., & Kumar, R. (2023). Electronic resources at technical university libraries: A study. *International Journal for Multidisciplinary Research*, *4*(4), 223–233. https://doi.org/10.36948/ijfmr.2022.v04i04.025

Singh, R. K., Raj, R., & Madalli, D. P. (2024). Investigation of research support services (RSS) in academic libraries of India. *Journal of Librarianship and Information Science*, *0*(0). https://doi.org/10.1177/09610006241245714

Singh, S. (2023). Library resources and their contributions in academic study and research: A study from the colleges of eastern Uttar Pradesh. *Library Progress. International/Library Progress International*, *43*(1), 87–100. https://doi.org/10.48165/bpas.2023.43.1.10

Sojanah, J., & Ferlinda, T. (2019). Student motivation and school facilities as determinants towards student learning outcome. *Proceedings of the 1st International Conference on Economics, Business, Entrepreneurship, and Finance (ICEBEF 2018)*, 313–318. https://doi.org/10.2991/icebef-18.2019.71

Tadituri, R., & Naick, D. B. R. (2023). Impact of e-resources and digital library exploring tools for engineering college students under Jawaharlal Nehru technological university Kakinada. *International Journal of Research -GRANTHAALAYAH*, *11*(5). https://doi.org/10.29121/granthaalayah.v11.i5.2023.5159

Terrile, V. C. (2024). Community college library services: Meeting students where they are. *Teachers College Record: The Voice of Scholarship in Education*, *126*(6-7), 46–63. https://doi.org/10.1177/01614681241285739

Velasquez, P. M. (2024). Exploring academic blended libraries: A study of student experiences [Thesis, La Trobe University]. In *OPAL (Open@LaTrobe) (La Trobe University)*. https://doi.org/10.26686/wgtn.26045848

Venner, M. A., & Washburn, J. (2021). A peer-to-peer service approach in academic libraries. *Journal of Access Services*, *18*(3), 149–172. https://doi.org/10.1080/15367967.2021.1924065

Vinod, D., & Kumar, S. K. (2024). Copyright challenges for library services: A study of law college libraries in Rajasthan. *Qubahan Academic Journal*, *4*(2), 540–557. https://doi.org/10.48161/qaj.v4n2a442

Yadav, S. K. (2023). The role of digital libraries as information resources for scholars: A descriptive analysis. *International Journal of Engineering, Business and Management*, *7*(4), 53–57.

Yamane, T. (1967). *Statistics: an introductory analysis* (2nd ed.). New York: Harper & Row.

Zhang, S., Yao, F., & Cheng, Y. (2024). An assessment of data analytics-based decision making for digital transformation in university libraries. *Archives Des Sciences*, *74*(2), 221–225. https://doi.org/10.62227/as/74229

Zheng, Z., Zeng, M., Huang, W., & Sun, N. (2024). The influence of university library environment on student interactions and college students' learning engagement. *Humanities and Social Sciences Communications*, *11*(1). https://doi.org/10.1057/s41599-024-02892-y.